

Barefoot Solar Engineers By Anu Saxena

This is part of the book [Women in the World Today](#), published by the State Department's Bureau of International Information Programs.



A revolution is happening in Barefoot College in rural Rajasthan, India. It is a quiet revolution that brings solar energy and clean technology to the poorest rural communities, changing the face of rural development. At the forefront of this revolution are semiliterate or illiterate rural women from Asia, Africa and Latin America, many of them grandmothers, who are trained to become skilled solar engineers.

Barefoot College was founded in 1972 in Tilonia, Rajasthan, India,

by social activist and educator Bunker Roy. Its purpose is to find simple, sustainable solutions to basic quality of life problems in rural communities: clean water, renewable energy, education and health care. Stable livelihoods and women's empowerment are also among Barefoot College's goals. Solar energy is an important "barefoot solution," and women — especially grandmothers — are preferred candidates for solar engineer training. As Bunker Roy puts it, "We have trained men, and found that they took their training and knowledge to go work in the cities. [Women] feel responsible for their village." Rural grandmothers have a longer history in the community and have less incentive to migrate. This keeps the knowledge and technology in the community. Their expertise is shared with others, ensuring project sustainability.

Treating the community members as partners and letting them manage and own their resources and technology are unique features of the Barefoot program. The trainees all hail from remote communities that have never known

conventional electricity and where literacy rates are low, especially for women and girls. They are selected by community consensus and, upon their return, are paid by the community to install, maintain and repair the solar units at a percentage of the monthly energy costs that would otherwise have been spent on the alternatives — fuels, candles and batteries.

Since 2005, 250 of these village women from 29 countries have brought solar electrification to around 10,000 houses, in regions as diverse as the hot desert plains of Rajasthan and rural hamlets tucked in the cold, mountainous, windswept plateaus of Ladakh, in India; Timbuktu, Mali, in Africa; and Solorja, Bolivia, high in the Andes. Most poor rural households that Barefoot College has helped in Africa and Latin America use approximately 1.5–2 gallons of kerosene per month for their lighting and cooking needs, according to the Barefoot College experience with rural households. It is estimated that this consumption emits an estimated 14.74–19.65 kilograms of CO₂ (Richard J. Komp, 2002). Switching to solar power has reduced environmental pollution and forest degradation in these communities by decreasing their use of firewood, diesel and kerosene. Using solar power has lowered rural families' lighting costs and reduced the levels of indoor pollutants and the fire hazards of kerosene use. The study conditions for schoolchildren are improved and women can engage in income-generating activities, such as handicrafts, after sundown.

The extraordinary results achieved by Barefoot College began with its six-month, hands-on solar engineering training program. The guiding principle of the college, that solutions to rural problems lie within the community, is nowhere more evident than at a solar engineering training classroom, where 30 participants, from various

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The American Center

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H O L I D A Y S

April 11 - Gudi Padwa



Saturday
Kids' Movie Screening
at 11:00 AM

The
LORAX

A 12-year-old boy searches for the one thing that will enable him to win the affection of the girl of his dreams. To find it he must discover the story of the Lorax, the grumpy yet charming creature who fights to protect his world.



13 April
(in honor of Earth Day)

Venue:

U.S. Consulate General,
C-49, G Block, Near Trident Hotel,
Bandra-Kurla Complex, Bandra (E), Mumbai - 400 051

Free and open to the public on a first-come, first-served basis.

This event is for children 6-16 years old; those under 16 must be accompanied by a parent.

Mobile phones and laptops are permitted for this event, but Bluetooth technology must be disabled. Cameras, memory storage devices, and other electronic equipment are not allowed. Photography and video recording in and around the Consulate compound is strictly prohibited.



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Rural grandmothers are being trained as solar engineers at a Barefoot College workshop session.

countries, sit side by side on benches, working with concentration to connect wires on a circuit board, assemble a solar lantern or draw what they have just created in a small notebook. Since there is no one common language among the trainees or instructors, the women learn to identify parts by color and use hand gestures liberally. Waves, smiles and greetings in a variety of languages welcome the visitor to this Barefoot United Nations of women, collaborating to bring light and hope to their communities.

The same enthusiasm and entrepreneurial activities pervade the Barefoot College campus. A short distance from the classroom, two impressive-looking 2.5-square-meter parabolic solar cookers glisten in the sunlight. The cookers are attended by Shahnaz and Sita, two Barefoot solar engineers (BSEs). They went through the basic solar program before specializing in the fabrication of cookers — a task traditionally associated with men, as it involves metal work and welding. As they explain some of the intricacies of constructing and calibrating the cooker, their pride in their work is evident. They now train other women to make the cookers. Sita has even found a way to reach a broader audience by composing a song with her colleagues on the benefits of using solar cookers, which they sing for community education programs. The story of their personal journey from conservative families, where they were limited to socially prescribed tasks, to their roles as educators, skillful mechanics and wage-earners is a powerful narrative of change.

As women's participation in environmental management has increased, they have become more visible. Women now have a voice in local politics. Examples are the Solar Warriors of Bhutan and the BSEs of Ethiopia, who petitioned their governments to start local BSE women's associations. Women enjoy an improved status in their communities because of their valuable contribution. Referring to their local BSE, a male village elder in Bolivia says admiringly, "She is better at this than I am ... and I am a car mechanic!"

By enrolling women and their communities as partners, Barefoot College has increased community awareness of sustainable practices while supporting traditional knowledge. Workshops on how to dispose of plastic responsibly, use solar cookers, improve management of water resources, including rain water harvesting, and other good practices that are kinder to the environment enhance the quality of rural life.

Anu Saxena has been involved with international development programs in marginalized communities, with a focus on gender issues, for more than 20 years. She earned her doctorate in social anthropology from Boston University and did her fieldwork in Colombia. She is currently the Latin America adviser to the Barefoot College (India) Solar Engineering program.

WORD FROM THE CENTER

State Department's Bureau of International Information Programs dedicates the month of April to energy, environment, science, technology, and health. I would especially like to highlight a few of our recent and upcoming programs under these themes.

In February, we had the opportunity to take U.S. speaker Blake Clayton to various educational institutions and think tanks. Clayton is a Fellow at the Council on Foreign Relations for Energy and National Security. One of the key take away messages from our energy expert was that investing in diverse sources of energy helps ensure future economic growth and innovation as well as preserve the environment. Furthermore, local solutions driven by innovation, science, and technology can help address future energy challenges.

In March, one of our consular officers did a fantastic presentation for Mumbai Mondays on "Women Inspiring Innovation through Imagination" by focusing on women in STEM fields of Science, Technology, Engineering, and Mathematics. Eighteen women were honored this year by the National Women's History Project for their pioneering work, scientific breakthroughs, life-saving discoveries, invention of new technologies, creation of organizations, as well as the promotion of women and girls in STEM. Speaking of women in STEM careers, we assisted with the recent visit of Indian-American astronaut Sunita Williams.

In April, we will be working with several foreign policy

experts, one of which is Dr. Gawdat Bahgat, professor of National Security Affairs at the National Defense University's Near East South Asia Center for Strategic Study. One of his many areas of expertise is energy security. Investing in access to energy now is fundamental to ensuring sustainable growth for billions and a more prosperous global economy. All are invited to attend a special Mumbai Mondays on April 15 at 6:30 PM with our U.S. guest speaker Dr. Bahgat. He will be speaking on the Global Energy Outlook and the geo-political impacts of developments in various energy sectors.

In honor of Earth Day, we are holding an essay writing contest. Check out our Alumni Highlights section to know more!

As always, for the latest updates, please follow us on facebook: <http://www.facebook.com/Mumbai.usconsulate>

Warm regards,



Swati Patel
Assistant Cultural Affairs Officer



Dance has changed me & I am changing the World!

I have been studying Kathak under the guidance

of my Guru, Pandit Chitresh Das for more than thirteen years now. Suffice it to say these thirteen years have been a journey in self-discovery that still continues.

As a master's student in the field of Public Health at the University of California, Berkeley, I threw myself into the study of power and women. During the course of my professional career I worked with girls and women from Cambodia, Laos, China, Mexico, India and Pakistan to empower them through education, economic development, community building and organizing.

My study of Kathak and my professional work in the field of women's empowerment came together seamlessly when I began to teach Kathak myself. I watched the girls

that came into my classroom transform before my very eyes. And of course! It was under Guruji's intensive guidance and through the study, practice and performance of Kathak that I myself began to discover my own power. As Guruji's disciple, I am pushed everyday – physically, emotionally, spiritually to achieve those things that might've seemed impossible, to shed those self-concepts and mental pitfalls that limit learning, growth and evolution, and to realize my potential to the fullest. Kathak is a powerful avenue for self-empowerment. I am living proof of this fact.

Social problems such as hunger, poverty, environmental degradation, economic, social and gender inequity, and violence plague our society today in staggering proportion. It is a well-documented fact that girls and women are critical resources in addressing these problems at the micro and macro level. And so, governments, businesses and NGO's across the world are engaged in efforts to educate and empower girls and women. The arts are a yet underutilized resource in these endeavors.

With support from the Fulbright Program and in partnership with The Akansha Foundation and SMILE, two prominent NGO's in Mumbai, I have the privilege of working with twelve young girls from disadvantaged communities, teaching them Kathak and documenting their transformative journey. As my Guruji does for me, through the medium of Kathak, I am working to awaken and enliven the power inherent in each of these young women so they may harness it to better their lives, families, communities and our society in turn.

Dance has changed me and I am changing the world. This has been and is my life's journey. These young women have embarked on that very same journey. They attend class and recite ancient Sanskrit Slokas, pound their feet in rhythmic unison, dance the stories of the Puranas and the Mahabharata and the Ramayana, and sing the songs of India's greatest saints. As they do, they come into their bodies, hearts, minds and souls. They leave the class awakened to who they are and what their potential is. They will, each one in her own way, undoubtedly transform and uplift our world.

By Rina Mehta an Indian-American Fulbright Scholar currently in India for her Fulbright program.

Website: www.USIEF.org.in
www.EducationUSA.state.gov
Phone: +91 22 2262 46 03
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Mumbai Mondays

Global Energy Outlook

What Lies Ahead?

By Dr. Gawdat Bahgat

The global energy markets are witnessing two fundamental developments: Shale gas and tide oil; and the growing share of alternative energy (nuclear

Dr. Gawdat Bahgat is professor of National Security Affairs at the National Defense University's Near East South Asia Center for Strategic Study. He is an Egyptian-born specialist in Middle Eastern policy, particularly Egypt, Iran, and the Gulf region. His areas of expertise include energy security, proliferation of weapons of mass destruction, counter-terrorism, Arab-Israeli conflict, North Africa, and American foreign policy in the Middle East. Bahgat's career blends scholarship with national security practicing. Before joining NESAC in December 2009, he taught at different universities. Bahgat published eight books including Energy Security (2011), International Political Economy (2010), Proliferation of Nuclear Weapons in the Middle East (2007), Israel and the Persian Gulf (2006), and American Oil Diplomacy (2003). His work has been translated to several foreign languages.

April 15, 2013
6:30 pm

U.S. Consulate General,
C-49, 'G' Block, Bandra-Kurla Complex,
Bandra-East, Mumbai-51

Free and open to the public, on a first-come, first-served basis.



Please carry a photo ID proof with you. Mobile phones and laptops are permitted for this event, but Bluetooth technology must be disabled. Cameras, memory storage devices, and other electronic equipment are not allowed. Photography and video recording in and around the Consulate compound is strictly prohibited.



Alumni Highlights

Dear Alumni of USG-sponsored programs:

I have completed a month as the Alumni Outreach and Program Coordinator for western India, and I am amazed by the diversity of work you all are doing. I was happy to receive an email from many of you welcoming me on my new position, and glad to meet a couple of you face-to-face. Let us continue being in touch, as I build up on the alumni database. You may share your experiences with me at AvaniBK@state.gov.

Sincerely,



Behrooz KY Avani

International Exchanges Website

If you are already registered, you may log in and post your own stories and events to these pages to share your accomplishments with other alumni, and network with them.

DID YOU KNOW...

Alumni of USG sponsored programs can register on the State Alumni website www.alumni.state.gov.

Once signed in, you can access content from State Alumni including:

1. Alumni Updates
2. Events
3. Grants database

This month's featured alumni:



The U.S. Department of State selected Dr. Shubhalaxmi Vaylure of India as March's International Exchange Alumni Member of the Month. Throughout March, Dr. Shubhalaxmi's dedication to building greater environmental awareness in India was recognized on the International Exchange Alumni website, the

Bureau of Educational and Cultural Affairs' official website for the more than one million Department-sponsored exchange alumni worldwide.

"I spent my growing years surrounded by trees and bees. Science was my favorite subject." Pursuing her passion for

nature, Dr. Shubhalaxmi participated in two U.S. Department of State exchange programs. She went on the Fulbright Indo-American Environmental Leadership Program at the University of Montana in 2003 and on a Hubert Humphrey Fellowship at Boston University in 2010. She currently works as Deputy Director at Bombay Natural History Society. Here's what she had to say about her U.S. exchange experience:

"I thought I was a new person when I returned from FIAELP in 2003 and learnt that sky is the limit when it comes for opportunities and that nothing is impossible in this world. But then when I spent 10 months in United States (for Humphrey's), I felt, I was reborn, because I was equipped with new knowledge and skill set. My liking towards management courses changed my career course from environment education into Non-profit management which has a great potential in my country."

In 2012, Dr. Shubhalaxmi and a team of her alumni peers won support from the State Department's Bureau of Educational and Cultural Affairs Alumni Engagement Innovation Fund (AEIF) to provide management training for professionals from Indian environmental NGOs. The team has already trained nearly 150 individuals.

Alumni Engagement Innovation Fund (AEIF)

Are you alumni of State Department exchange programs? Team up with fellow alumni to tackle some of the world's most pressing issues! The Alumni Affairs Division of the Bureau of Educational and Cultural Affairs will host a webinar on the launch of the 2013 Alumni Engagement Innovation Fund (AEIF), which supports alumni initiatives that promote shared values and innovative solutions to global challenges. Join Karen Robblee, Director of Alumni Affairs, who will announce a competition that provides small grants (up to \$25,000 each) to teams of past and current participants of U.S. government-funded exchange programs to carry out public service projects that utilize skills and knowledge they have gained through their exchange experiences. Learn about this competition, which gives alumni the opportunity to form partnerships with each other to spur innovative ideas and projects that address global issues on a local, national, regional, and international level!

Thursday, April 25 at 6:00 pm IST

<https://conx.adobeconnect.com/eca>

If you are an alumnus of a United States exchange program and have received special recognition, please send a write-up with 2-3 photos to mumbaipublicaffairs@state.gov. You could be featured in future e-bulletins!



To commemorate
Earth Day
April 22, 2013
we are conducting an



Alumni Essay Writing Competition

Topic

How your exchange program led to a renewed sense of Environmental Consciousness

In a 1-page essay (single-spaced, Times New Roman – size 12) discuss experiences from your exchange program in the U.S. that led you to become more environmentally conscious and what best practices you put into action on your return to India.

Essays to be submitted between **April 5-15, 2013** via email: **MumbaiPublicAffairs@state.gov**. (In the body of the email, kindly mention your full name, the exchange program you were a part of, and the year of the program).

This essay competition is open to Indian alumni of any USG-sponsored exchange program in the Mumbai Consular district covering the states of Chhattisgarh, Goa, Gujarat, Madhya Pradesh and Maharashtra.

Exciting prizes to be won!!



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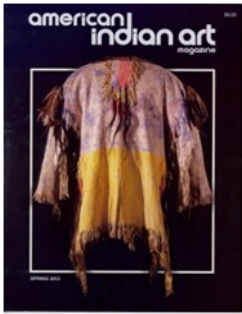
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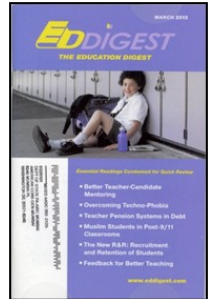


American Indian Art (Quarterly)

This journal presents art by all North American Indians through articles and illustrations designed to be of interest to both casual readers and professionals. The journal features American Indian painting, beadwork, carving, textiles, basketry, ceramics, jewelry, book and exhibition reviews, and museum & gallery announcements.

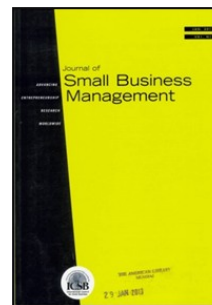
Education Digest (Monthly)

The *Education Digest* aims to raise the level of awareness and understanding of important current issues in education among educators and the public. The magazine provides original and secondary source articles and ideas that teachers and administrators can use to understand current education concerns and learn new, more effective teaching methods.



Fantasy and Science Fiction (6 issues a year)

Founded in 1949, *The Magazine of Fantasy & Science Fiction* is the award-winning Science Fiction magazine offering compelling short fiction by writers such as Ray Bradbury, Ursula K. Le Guin, Terry Bisson and many others; It also carries humor from cartoonists and writers.



Journal of Small Business Management (Quarterly)

Published by the International Council for Small Business (ICSB), the JSBM features scholarly research articles in the fields of small business management and entrepreneurship.

To read these and many more
visit the

The American Library

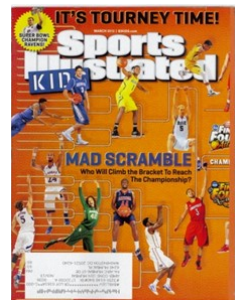
Monday to Saturday
10 a.m. to 6 p.m.

022 - 26724231/ 4024

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Sports Illustrated Kids (Monthly)

A magazine for sports fans between the ages of 8 to 14, *Sports Illustrated Kids* presents articles on the positive lessons that can be learned from athletes and the world of sports, including goal setting, overcoming challenges and obstacles, striving to be your best, and maintaining a healthy lifestyle.





Theme of the month: Energy

Saturday Film Screenings

at 2:30 p.m.

April 13

AVATAR

162 min, 2009



A paraplegic Marine dispatched to the moon Pandora on a unique mission becomes torn between following his orders and protecting the world he feels is his home.

April 27

IN THE SHADOW OF THE MOON

109 min, 2007

The surviving crew members from NASA's Apollo missions tell their story in their own words.



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C-49, G Block, Bandra-Kurla Complex, Bandra-East, Mumbai-51

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